

I claim:

1. A space frame structure capable of deployment or retraction comprising the elements of multiple truss elements, each truss element being capable of existing in either a straight and rigid condition, or existing in a curved and flexible condition, with each end of said truss elements connected to at least two other structural elements desired to be held spaced apart in a prescribed orientation.
2. The invention of Claim 1 wherein said truss elements comprise a single long beam having non-fully constrained end attachment points, connectively hinged to one or more similar beams which do not have constrained end attachment points, for the purpose of existing in either a straight and rigid condition, or to exist in a curved and flexible condition, depending on the angular orientation of said connectivity hinge.
3. The invention of Claim 1 wherein said truss elements are comprised of a carbon fibre composite material.
4. The invention of Claim 1, having means for alternately connecting trusses on one end of the structure to a fixed attachment ring and a rotateable deployment ring, so as to effect a condition of creating parallel truss pairs when it is desired to collapse the structure, and to likewise create a condition when it is desired to deploy and rigidify the structure by rotation of said deployment ring to triangulate successive truss pairs.

5. The invention of Claim 2, wherein the hinge element comprises two fabric or membrane like strips of material sewn together to create pockets for the insertion of beam like truss elements, so as to effect a hinge apparatus at a line defined by the sewn seam separating two or more beam like truss elements.

6. The invention of Claim 4, wherein provision is made to automate and mechanize the apparatus for automatic deployment or automatic retraction.

7. An astronomical telescope structure comprising primary and secondary reflecting mirrors held rigidly separated by a triangulated truss structure, having motional degrees of rotational freedom about a horizontal azimuth axis, and rotational freedom about an orthogonal altitude axis, said telescope having provision for adjustable separation of said primary and secondary mirrors with respect to the altitude rotational axis for the purpose of adjusting the balance point of said telescope structure to coincide with the approximate location of said altitude rotational axis.

8. An astronomical telescope structure comprising primary and secondary reflecting mirrors held rigidly separated by a triangulated truss structure, having motional degrees of rotational freedom about a horizontal azimuth axis, and rotational freedom about an orthogonal altitude axis, said telescope having the components one or more tubular metal rings as the bearing surface of said azimuth axis, thereby providing an essential hollow space located therein.